

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 2, 8-9, 12, and 17-22 and CANCEL claim 1 in accordance with the following:

1. (cancelled)

2. (currently amended) ~~The irradiation field limiting device according to claim 1, An irradiation field limiting device which shields radiation from a radiation source by driving a plurality of aperture leaves a specific amount to limit an irradiation field to a desired range, the irradiation field limiting device comprising:~~

a plurality of aperture leaves each having a circumferential shape;

a driver section; and

a flexible linear member, one end thereof being secured to at least one aperture leaf and the other end being connected to the driver section, the driver section being configured to drive the flexible linear member in an axial direction of the flexible linear member to cause movement of the at least one aperture leaf,

wherein the aperture leaves are arranged in a thickness direction thereof adjacent to each other, the one end of the flexible linear member is secured to an inner or outer circumferential surface of the at least one aperture leaf, and the driver section drives the flexible linear member while increasing or decreasing a contact portion between the flexible linear member and the inner or outer circumferential surface of the at least one aperture leaf by warping the flexible linear member, and

wherein the driver section includes:

a base;

a drive shaft connected with a driving source through a connection portion and inserted into the base; and

a slider which moves along an axial direction of the drive shaft accompanying rotation of the drive shaft and is connected with the linear member.

3. (original) The irradiation field limiting device according to claim 2,  
wherein the connection portion includes a torque limiter section which limits transmission  
of torque equal to or greater than a specific torque.

4. (original) The irradiation field limiting device according to claim 3,  
wherein the connection portion includes a clutch mechanism which transmits a driving  
force to the drive shaft or disconnects the driving force from the drive shaft; and  
wherein the irradiation field limiting device includes a control section which prevents the  
driving force from being transmitted to the drive shaft using the clutch mechanism when the  
torque limiter section has operated for a specific period of time.

5. (previously presented) The irradiation field limiting device according to claim 2,  
wherein the connection portion includes a clutch mechanism which transmits a driving  
force to the drive shaft or disconnects the driving force from the drive shaft; and  
wherein the irradiation field limiting device includes:  
a position detection section which detects a position of the aperture leaves; and  
a control section which prevents the driving force from being transmitted to the drive  
shaft using the clutch mechanism to stop movement of the aperture leaves when the position  
detection section has detected that the aperture leaves have moved to a target position.

6. (previously presented) The irradiation field limiting device according to claim 2,  
comprising:  
a driving force transmission section which transmits a driving force of the driving source  
to a plurality of the drive shafts;  
a plurality of clutch mechanisms which transmit the driving force to the drive shafts or  
disconnect the driving force from the drive shafts; and  
a control section configured to drive each of the aperture leaves by transmitting the  
driving force of the driving source in units of the drive shafts by controlling each of the clutch  
mechanisms.

7. (original) The irradiation field limiting device according to claim 2,  
wherein the slider has a female thread portion; and  
wherein the drive shaft has a male thread portion which engages the female thread  
portion and moves the slider in the axial direction of the drive shaft by being rotated.

8. (currently amended) The irradiation field limiting device according to claim 42, wherein the aperture leaf is fan-shaped or approximately rectangular.

9. (currently amended) The irradiation field limiting device according to claim 42, wherein the linear member comprises a continuous metal wire, a wire rope formed by twisting metal wires, or a hollow pipe.

10. (previously presented) The irradiation field limiting device according to claim 2, comprising:

    a support shaft provided in the base and disposed approximately in parallel with the drive shaft at a specific interval from the drive shaft;

    at least one guide which is supported on the support shaft so that the guide moves in an axial direction of the support shaft and maintains a shape of the linear member; and

    an elastic member which is disposed between the guides and maintains an approximately identical interval between the guides.

11. (previously presented) The irradiation field limiting device according to claim 2, comprising:

    an absolute position sensor which measures an absolute position of at least one of the at least one aperture leaf and the slider; and

    a high-resolution relative position sensor which measures an amount of movement from a specific position of at least one of the at least one aperture leaf and the slider measured using the absolute position sensor.

12. (currently amended) The irradiation field limiting device according to claim 42, wherein the aperture leaves are arranged in the thickness direction so that the aperture leaves freely move through rolling elements; and

    wherein a side surface of each aperture leaf protrudes in the thickness direction to form a holding portion which holds each rolling element.

13. (previously presented) The irradiation field limiting device according to claim 12, wherein the holding portion forms at least one of a straight line and a curve to hold each rolling element.

14. (previously presented) The irradiation field limiting device according to claim 12, wherein one of adjacent rolling elements provided on either side of each aperture leaf is disposed at a position close to the radiation source, and the other is disposed at a position away from the radiation source.

15. (previously presented) The irradiation field limiting device according to claim 12, wherein holding portions are disposed at different positions with respect to the irradiation direction, and are repeatedly disposed at an identical position in units of a specific number of the aperture leaves.

16. (original) The irradiation field limiting device according to claim 12, wherein the holding portion is a shielding portion which prevents radiation from passing through a space between the aperture leaves adjacent to each other.

17. (currently amended) The irradiation field limiting device according to claim 12, comprising:

a shielding portion which shields radiation in an opening between the aperture leaves adjacent to each other.

18. (currently amended) The irradiation field limiting device according to claim 12, wherein linear members respectively secured to the aperture leaves adjacent in the thickness direction differ in axial direction.

19. (currently amended) The irradiation field limiting device according to claim 18, wherein the driver section drives the at least one aperture leaf of which the axial direction of the linear member is set to be identical in units of a specific number of the linear members.

20. (currently amended) The irradiation field limiting device according to claim 12, wherein linear members respectively secured to the aperture leaves adjacent in the thickness direction differ in axial direction and are identical in axial direction in units of a specific number of the linear members; and

wherein the irradiation field limiting device includes a plurality of driver units each of which includes a plurality of driver sections which respectively drive the linear members of which

the axial directions are set to be identical in units of a specific number of the linear members.

21. (currently amended) The irradiation field limiting device according to claim 42, comprising:

a linear member holding portion which holds the linear member between the at least one aperture leaf and the driver section so that the linear member moves in the axial direction to prevent the linear member from buckling.

22. (currently amended) The irradiation field limiting device according to claim 42, wherein the linear member drives the at least one aperture leaf while contacting the thick portion, is preliminarily bent in a direction away from a contact portion between the linear member and the thick portion, and presses a portion in contact with the thick portion so that the linear member is prevented from buckling.